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ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS

No anchoring areas in the Tortugas Ecological Reserve and the Tortugas Bank in the Florida Keys

Note by the United States

SUMMARY

Executive summary: This document sets forth a proposal for two mandatory no anchoring areas for all ships within the Tortugas Ecological Reserve and one mandatory no anchoring area for ships greater than 50 meters on Tortugas Bank in the Florida Keys.

Action to be taken: Paragraph 17

Related documents: IMO Assembly resolution A.885(21), IMO Assembly resolution A.720(17), MEPC 46/6/2, MEPC 45/20, MSC 73/21 (report), NAV 36/3/3, NAV 47/3, General Provisions on Ships' Routeing, Part A (Seventh Edition)

1 This proposal for the establishment of three mandatory no anchoring areas is an integral part of a proposal to identify the marine area around the Florida Keys as a Particularly Sensitive Sea Area (PSSA). The establishment of these no anchoring areas would be one of the associated protective measures to protect the area proposed for PSSA designation from the risk of damage by international shipping activities. The United States submitted its PSSA proposal to the forty-sixth session of the Marine Environment Protection Committee.

2 The United States proposes the establishment of two mandatory no anchoring areas to be adopted by IMO for all ships to protect the coral reefs within the Tortugas Ecological Reserve. The size of the northernmost area is approximately 91 square nautical miles and the size of the southernmost area is approximately 60 square nautical miles. The third proposed mandatory no anchoring area is for the Tortugas Bank for ships of greater than 50 meters. The size of this area is approximately 27 square nautical miles. The geographic co-ordinates of these three areas are set forth in annex 1 and a chartlet depicting these areas is annex 2.

3 The adoption of these proposed measures can be expected to significantly prevent and reduce the risk of damage to this coral marine environment by ships, without restricting the sea area available for navigation. The sizes of the proposed no anchoring areas are limited to what is essential for the interests of safe navigation and the protection of the marine environment. Adverse impacts on ships are not expected because ample areas to anchor remain outside of the proposed no anchoring areas. These areas to anchor are in reasonable proximity to existing

traffic routes and are primarily sandy areas, thus providing for safer, more stable anchoring than anchoring on coral. Annex 3 provides an example of an area to anchor.

Background

4 Damage to the coral reef banks in the Tortugas Ecological Reserve and Tortugas Bank by the anchoring of large ships has been well established. Significant damage is caused by the direct impact of large, heavy anchors and from the dragging and swinging of large anchor cables and chains. These activities destroy living coral heads and create gouges and scars that destabilize the reef structure. Anchoring on these coral banks causes significant adverse environmental impacts to these resources. As these coral formations take thousands of years to build, regeneration of the reef from anchor damage may never occur. If optimal conditions for regeneration exist, it would still take hundreds, and perhaps thousands, of years for the reef to return to its previous condition before the damage from anchoring occurred.

5 Two of the proposed no anchoring areas comprise the Tortugas Ecological Reserve. The coral formations in the Reserve are the "crown jewels" of the Florida Keys archipelago. The highest density of coral cover in the Florida Keys, and coral pinnacles as high as 12 meters, are found in this area. The spectacular character and expanse of the reefs, as well as the incredible biodiversity and productivity of species found in these areas, is due in large part to their location, where the tropical waters of the Caribbean mingle with the more temperate waters of the Gulf of Mexico. They are also near one of the world's strongest currents, the Florida Current, also referred to as part of the Gulf Stream that continues its way beyond the Straits of Florida into the Atlantic Ocean.

6 The oceanographic conditions surrounding the Tortugas Ecological Reserve provide ideal conditions for the proliferation of a rich diversity of coral, seagrass, and a vast array of species. All of the species of soft coral are found in this area and it has several caves that were created by mushroom-shaped coral structures, which are often covered by sponges and bryzoans. Scientists examining one of these bizarre, mushroom-shaped coral found it to be approximately 400 years old. Organisms rarely seen elsewhere in the Keys, such as crinoids (feather stars) and black corals, occur on the reefs as well as some species found only in the Tortugas, such as the red-tailed triggerfish. Healthy baitfish populations support thriving seabird communities, including sooty and noddy terns, masked boobies, and the only roosting population of magnificent frigate birds in the continental United States. Perhaps most importantly, due to its location at the juncture of several major ocean currents, the Tortugas has a high potential for exporting the larvae of fish, lobster, and other marine organisms to the Keys and the east coast of Florida.

7 The northernmost proposed no anchoring area of the Tortugas Ecological Reserve contains a wide range of coral habitats, including some of the most vital and beautiful coral reefs in the Florida Keys. The coral reef is so prolific in this area that it forms a veneer over the actual ocean bottom, which is approximately three feet below the reef. It is also a productive area for a number of fish species and provides an excellent reference area for scientific research and monitoring. The southernmost proposed no anchoring area is also an incredibly rich area for fish. The area serves as the spawning grounds for many commercial fisheries in the Florida Keys and Southeast Florida, such as several species of snapper and grouper including gray, cubera, mutton, dog, red and yellowtail snapper, black grouper, and ocean triggerfish. It also has a colourful array of reef fish, including many that are not commonly seen in other parts of the Florida Keys. The red-tailed triggerfish is among the unique species found in this area. It also encompasses important habitat for red and yelloweye snapper, snowy grouper, tilefish, and the golden crab.

8 The Tortugas Bank is characterized by low-relief, hard-bottom coral, with patches of sand and rubble. Brown algae and soft coral (gorgonians) dominate the substratum. As water depths increase, the coral fans out into pancake-like structures to maximize their surface area and therefore their exposure to light. Since this area is contiguous to the Tortugas Ecological Reserve, it has many of the same species as occur in the Reserve.

9 Due to its proximity to the Florida Straits, the Tortugas Ecological Reserve and Tortugas Bank is adjacent to one of the most heavily trafficked shipping areas in the world. It is estimated that approximately 40 percent of the world's commerce passes within a day and a half sailing time of Key West, usually en route to or from the Panama Canal or ports in the Gulf of Mexico. To take advantage of the additional speed afforded by the current, north and eastbound ships historically follow the axis of the Gulf Stream. Ships apparently anchor in the Tortugas Ecological Reserve and Tortugas Bank to wait for orders.

10 There is clear evidence of anchoring damage in the three proposed no anchoring areas. The largest anchor scar found to date covers an area exceeding 50,000 square meters in a place otherwise completely covered by coral. Two other sites bear evidence of anchor damage involving areas greater than 2,500 meters. Chain scars from the swinging of ships on their anchors are also evident on many corals. There are hundreds of abraded, fractured, and toppled coral colonies that appear to be from the dragging of anchors or anchor cables and chains. Loose coral pieces act as agents of further injury to the living coral, particularly during heavy seas and storms as the pieces are repeatedly driven into and around the living coral. Additionally, in spite of a United States domestic no anchoring regulation, approximately eight ships have dropped anchor in this area in violation of the regulation. Three of these violations occurred within a seven-month period in 1999-2000.

Proposal

11 The United States proposes two mandatory no anchoring areas for all ships in the Tortugas Ecological Reserve and one mandatory no anchoring area for ships greater than 50 meters on Tortugas Bank to protect the coral reef from destruction by ships' anchors, cables and chains. Hydrographic surveys of these areas have been conducted, and appropriate aids to navigation exist. The proposal will not interfere with any existing patterns of ship traffic since it allows ships to continue to navigate through the area and therefore does not limit the sea area available for navigation. Other areas are available for ships to anchor which are in close proximity to international shipping routes.

12 The United States proposes that anchoring by all ships be prohibited in the two areas comprising the Tortugas Ecological Reserve because of the spectacular character and expanse of the reefs, as well as the incredible biodiversity and productivity of species found in these areas. Recent research of coral in these areas revealed that the coral cover is so high, and water depths so deep, that anchoring without damaging coral is virtually impossible. For the area of Tortugas Bank, the United States proposes that the no anchoring area apply only to ships of greater than 50 meters. Tortugas Bank contains some patches of sand and rubble where smaller vessels may anchor without touching coral. These areas are not, however, big enough to provide a safe and stable anchoring area for the larger ships and such anchoring is prohibited under United States domestic law. Vessels of 50 meters or smaller may anchor in such a manner so as to avoid touching and damaging the coral and they often send a diver overboard to verify the appropriate placement of the anchor.

13 The significant damage that has been, and continues to be, caused by anchoring in these unique areas is sufficient justification for the establishment of mandatory no anchoring areas. The United States has taken several steps domestically to protect the coral in an area within the Tortugas Ecological Reserve and Tortugas Bank from damage by anchoring. Since July 1, 1997, there has been a sanctuary-wide prohibition against the destruction of coral from all activities, including the anchoring of vessels. To address the destruction to coral by large commercial vessels, a sanctuary regulation was promulgated in 1997. Although notification of this regulation has been published in several places, including on United States nautical charts, in notices to mariners, the United States Coast Pilot, the United States Code of Federal Regulations, and on the NOAA sanctuary web page (http://www.sanctuaries.nos.noaa.gov), ships continue to violate this no anchoring regulation. Based on the continued violations of the existing domestic no anchoring measure and the significance of the coral in this area, a mandatory measure is necessary, and pursuing such a measure solely through domestic means is ineffective. It is, therefore, appropriate at this time to pursue a mandatory measure through IMO.

14 Safety considerations also support the establishment of this measure. The safety of a ship can depend on the ability of its anchor to hold, and the character of the bottom is of prime importance. Coral provides an unstable anchoring bottom. The scars and gouges are clear evidence that anchors tend to drag along the bottom, rather than hold in the coral. There are ample areas outside of the proposed no anchoring areas that have primarily sandy bottoms, which provide good and safe holding ground for anchors. Annex 3 provides an example of an area to anchor.

Additional Considerations

15 The United States is taking actions to regulate all activities within the Tortugas Ecological Reserve to protect this unique area. For example, it is one of the very few areas in the United States that is expected to be designated as a no-take area for fishing and the consumption of other resources. Except for the transit of vessels, public access to this area would be strictly regulated.

16 In Tortugas Bank, various regulations of the Florida Keys National Marine Sanctuary apply to protect coral and its related habitats. These include prohibitions on the removal of, injury to, or possession of coral or live rock; alteration of, or construction on, the seabed; operation of a vessel in such a manner as to strike or otherwise injure coral, seagrass, or any other immobile organism, or anchoring a vessel on coral other than hardbottom in water depths less than 40 feet when the seabed can be seen; and take or possession of protected wildlife.

Conclusion

17 The Sub-Committee is asked to approve this proposal for the establishment of two mandatory no anchoring areas for all ships and one mandatory no anchoring area for ships greater than 50 meters in the areas set forth in Annex 1 and forward the proposal to the Maritime Safety Committee for its adoption. The United States requests that the effective date of implementation be six months after adoption. The Sub-committee is further requested to notify the Marine Environment Protection Committee of its decision on this proposal.

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ANNEX 1

TORTUGAS ECOLOGICAL RESERVE AND TORTUGAS BANK

(Reference Charts: United States 11434, 1998 edition.
Note: These charts are based on North American 1983 Datum.)

Description of the No Anchoring Areas

Northernmost Area of the Tortugas Ecological Reserve

To avoid destruction of this unique, fragile and pristine coral reef ecosystem from anchoring, all ships shall avoid anchoring in the area bounded by a line connecting the following geographical positions which is designated as a mandatory no anchoring area:

(1)	24º46'.00N	083º06'.00W
(2)	24º46'.00N	082º54'.00W
(3)	24º45'.80N	082º48'.00W
(4)	24º43'.53N	082º48'.00W
(5)	24º43'.53N	082º52'.00W
(6)	24º43'.00N	082º54'.00W
(7)	24º39'.00N	082º58'.00W
(8)	24º39'.00N	083º06'.00W
(9)	24º46'.00N	083º06'.00W

Southernmost Area of the Tortugas Ecological Reserve

To avoid destruction of this unique, fragile and pristine coral reef ecosystem from anchoring, all ships shall avoid anchoring in the area bounded by a line connecting the following geographical positions which is designated as a mandatory no anchoring area:

(10)	24º33'.00N	083º09'.00W
(11)	24º33'.00N	083º05'.00W
(12)	24º18'.00N	083º05'.00W
(13)	24º18'.00N	083º09'.00W
(14)	24º33'.00N	083º09'.00W

Tortugas Bank Outside of the Tortugas Ecological Reserve

To avoid the destruction of this unique and fragile coral reef ecosystem from anchoring by large ships, ships greater than 50 meters shall avoid anchoring in the area bounded by a line connecting the following geographical positions which is designated as a mandatory no anchoring area:

(15)	24º32'.00N	083º00'.05W
(16)	24º37'.00N	083º06'.00W
(17)	24º39'.00N	083º06'.00W
(18)	24º39'.00N	083º00'.05W
(19)	24º32'.00N	083º00'.05W

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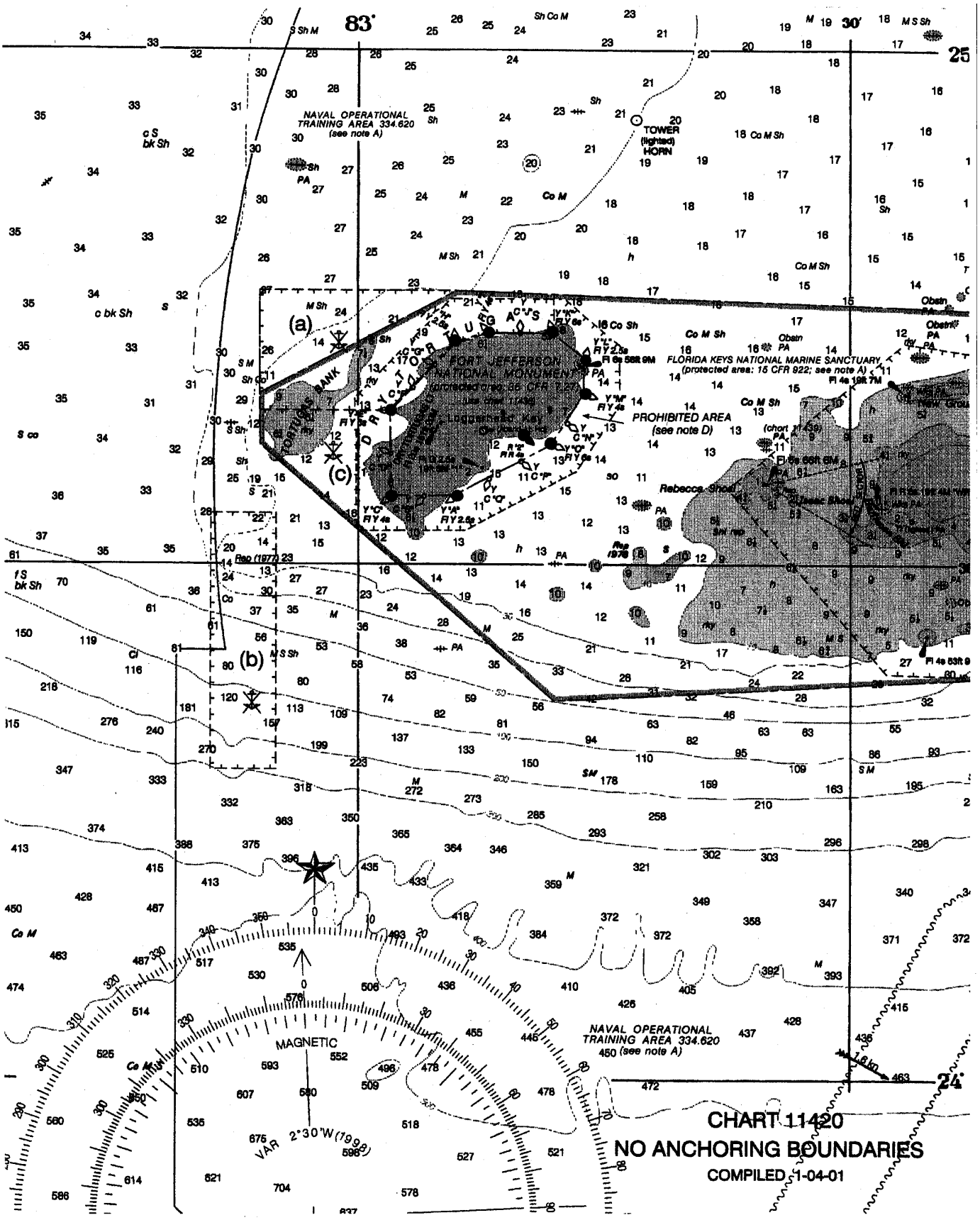
ANNEX 2


83°
30'
25
24°
NAVAL OPERATIONAL TRAINING AREA 334.620 (see note A)
TOWER (lighted) HORN
FORT JEFFERSON NATIONAL MONUMENT (protected area: 15 CFR 922)
FLORIDA KEYS NATIONAL MARINE SANCTUARY (protected area: 15 CFR 922; see note A)
PROHIBITED AREA (see note D)
Rebecca Shoal
(a)
(b)
(c)
MAGNETIC
VAR 2°30'W (1998)
NAVAL OPERATIONAL TRAINING AREA 334.620 450 (see note A)
CHART 11420
NO ANCHORING BOUNDARIES
COMPILED 1-04-01

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ANNEX 3

Example of an alternative anchoring site:

(1)	25º00'.00N	082º30'.00W
(2)	25º07'.00N	082º30'.00W
(3)	25º00'.00N	082º42'.00W
(4)	25º07'.00N	082º42'.00W